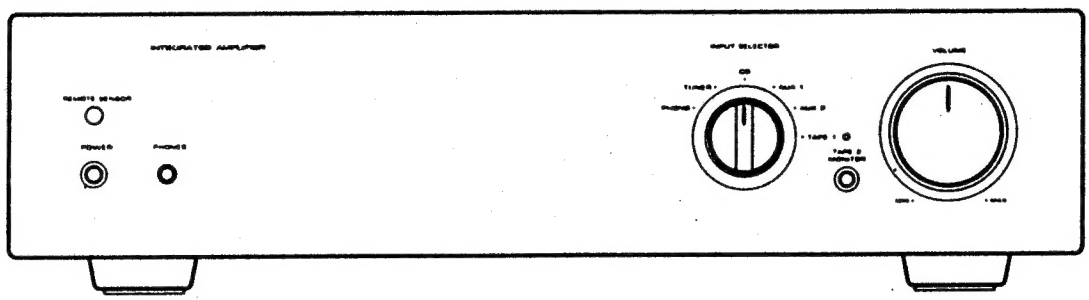
AX-7R

STEREO INTEGRATED AMPLIFIER



■ **CONTENTS** ■

Sherwood

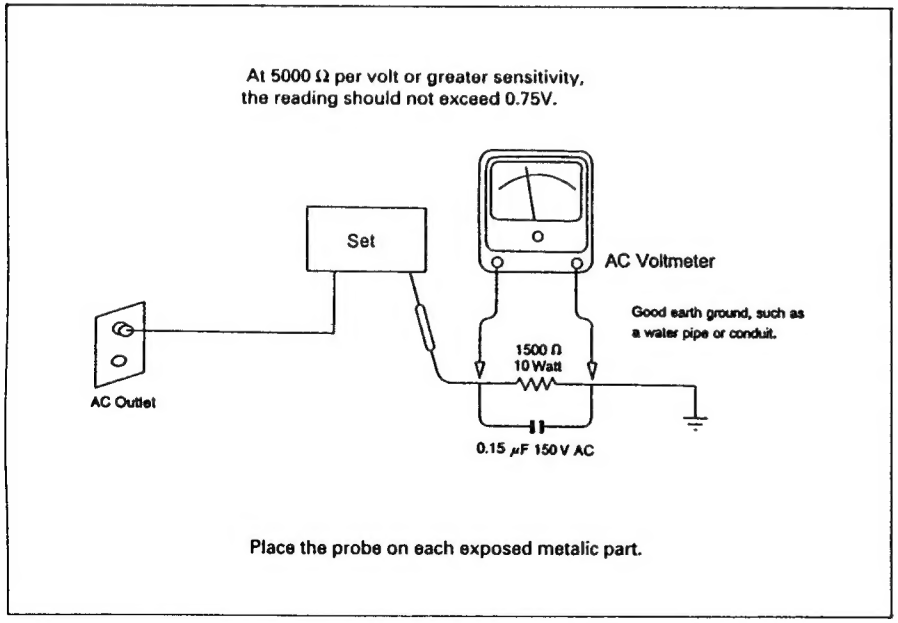
SAFETY PRECAUTIONS

WARNING
Before servicing this unit, familiarize yourself with the following precautions:

1. Many electrical and mechanical parts in this chassis have special safety characteristics that often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltge, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements: electrical components having such features are identified by ⚠ in the schematic diagram and the parts list.

   Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

2. Before returning the set to the customer, always do an AC leakage current check on the exposed metal parts of the cabinet, such as terminals, screw heads, and metal overlays, to be sure the set is safe to operate danger of electrical shock. Plug the AC line cord directly into a 120 V AC outlet (120 V AC version only). (Do not use a line isolation transformer during this check.) Be sure your AC voltmeter has a sensitivity of 5000 Ω per volt or greater. Then connect a 1500 Ω 10 watt resistor, paralleled by a 0.15 µF 150 V AC capacitor, between a known good earth ground (such as a water pipe, or conduit) and the exposed metalic is parts, one at a time. Measure the AC voltage across the combination of a 1500 Ω resistor and a 0.15 µF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metalic part. Voltage measured must not exceed 0.75V RMS. This corresponds to 0.2 mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



SPECIFICATIONS

Description			Unit	Norminal	Limit
RMS output power: both channels driven, into 8 Ω load, from 20 Hz to 20 kHz, with no more than 0.05 % THD. both channels driven, into 8 Ω load, at 1 kHz with no more than 0.7 % THD. both channels driven, into 4 Ω load, at 1 kHz with no more than 0.7 % THD.			W W W	52 63 94	50 60 90
Total harmonic distortion: at 8 Ω load, 50 W output, 1 kHz. at 4 Ω load, 80 W output, 1 kHz.			% %	0.007 0.009	0.015 0.02
Intermodulation distortion: at 8 Ω load, 50 W output, 60 Hz: 7 kHz=4:1 SMPTE			%	0.004	0.01
Signal to noise ratio ("A" WTD, UNWTD/WTD):		PHONO CD/AUX, ETC	dB dB	72/76 93/103	66/70 87/97
Frequency response at 1 W output:		PHONO(RIAA): 30 Hz-20 kHz CD, AUX, ETC: -1 dB	dB kHz	±0.5 5-180	±1 10-150
Input sensitivity at 50 W output, 1 kHz, 8 Ω load:		PHONO CD, AUX, ETC	mV mV	2.6 160	2.3~2.9 140~180
PHONO Input overload at 1 kHz, 0.7 % THD.			mV	180	150
Function crosstalk:	CD→ AUX	1 kHz 10 kHz	dB dB	92 91	85 84
	CD→ TAPE 1	1 kHz 10 kHz	dB dB	92 91	85 84
	CD→ TAPE 2 MON.	1 kHz 10 kHz	dB dB	92 91	85 84
	CD→ PHONO	1 kHz 10 kHz	dB dB	72 72	65 65
Channel separation	CD/AUX, ETC	1 kHz 10 kHz	dB dB	83 68	73 55
Damping factor at 1 kHz 8 Ω load.			-	100	70

General

Speaker load impedance ..... 4-16 Ω
Power consumption ..... 360 W
Dimensions(WxHxD) ..... 440 x 100 x 330 mm
(17.3 x 3.9 x 13 inch)
Weight(Net) ..... 10.5 kg
(24.1 lbs)

Power requirements:

A: 120 V 60 Hz for American/Canadian version
B: 120/220 V 60/50 Hz for multy voltage version(switchable)
D: 230 V 50 Hz for German General European version
E: 240 V 50 Hz for UK/Australian version
G: 220 V 50 Hz for Other Area

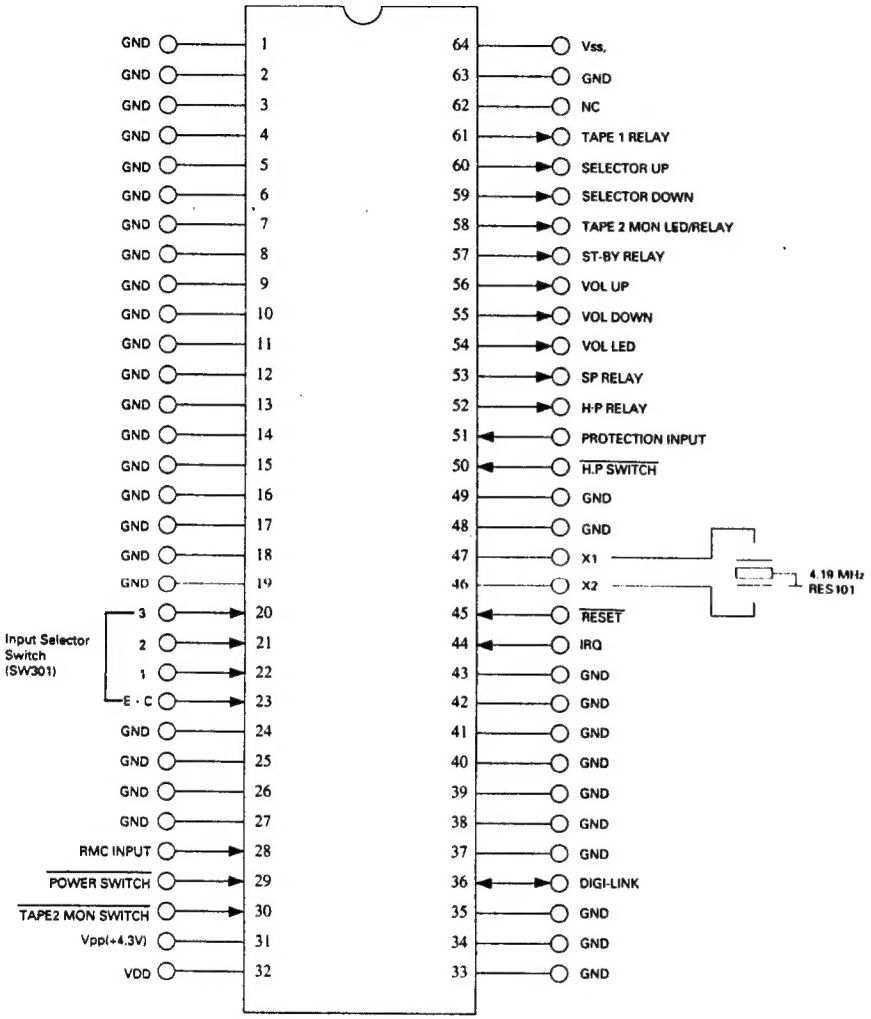
Note :

1. Norminal specs represent the design specs. All units should be able to approximate these some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable: in no case should a unit fail to meet limit specs.
2. This manual is based on the Geneart European (D) standard, and provides information on regonal circuit modification through the use of alternate schematic diagrams or wiring diagram, and information on regional component variations through the use of parts lists. Design and specifications subject to change without notice.

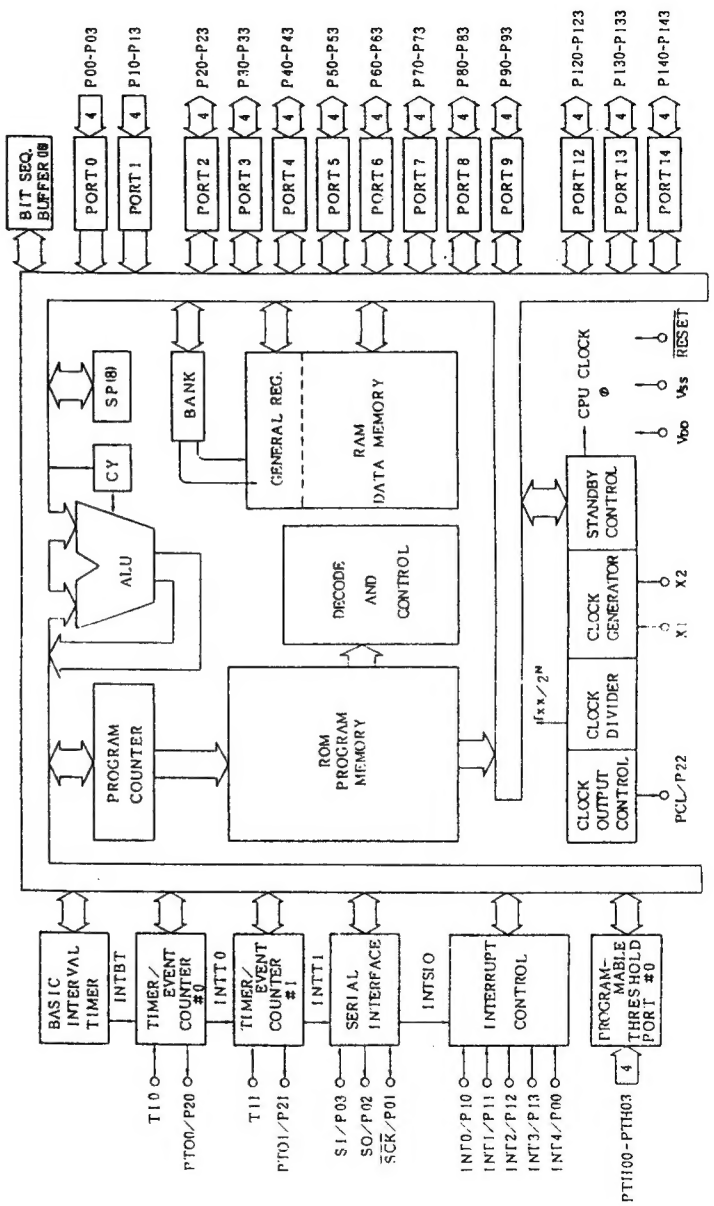
CIRCUIT DESCRIPTION

IC102: μPD 75108CWX14

1. Pin Connection



Block Diagram

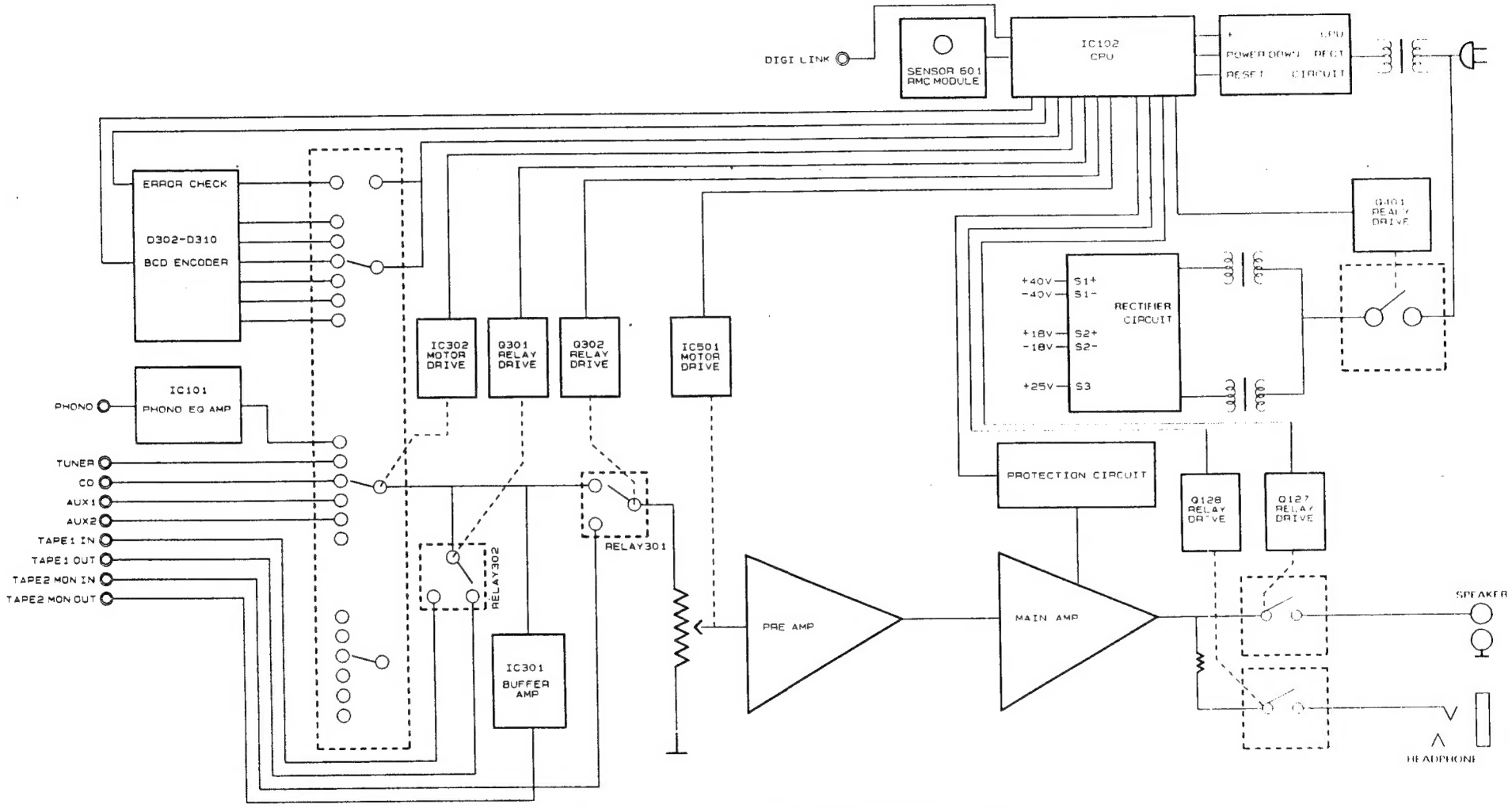


3. Input and Output Terminal Function

Pin Code	I/O	Compatible Port	Function	When Reset
P00	I	INT4	4 bit input port (port 0)	Input
P01	I/O	SCK		
P02	I/O	S0		
P03	I	S1		
P10	I	INT0	4 bit input port (port 1)	Input
P11		INT1		
P12		INT2		
P13		INT3		
P20	I/O	PTO0	4 bit input port (port 2)	Input
P21		PTO1		
P22		PCL		
P23		-		
P30-P33	I/O	-	Programmable 4 bit I/O port (port 3) Each bit can be specified as a input or output individually.	Input
P40-P43	I/O	-	Programmable 4 bit I/O port (port 4)	Input
P50-P53	I/O	-	Programmable 4 bit I/O por (port 5)	Input
P60-P63	I/O	-	Programmable 4 bit I/O port (port 6) Each bit can be specified as a input or output individually.	Input
P70-P73	I/O	-	Programmable 4 bit I/O port (port 7)	Input
P80-P83	I/O	-	Programmable 4 bit I/O port (port 8)	Input
P90-P93	I/O	-	Programmable 4 bit I/O port (port 9)	Input
P120-P123	I/O		N ch. open drain 4 bit I/O port (port 12) Each bit can contain blow up resistor. (mask option) Open drain voltage:12V	Input
P130-133	I/O	-	N-ch. open drain 4 bit I/O port (port 13) Each bit can contain blow up resistor. (mask option) Open drain voltage:12V	Input
P140-143	I/O	-	N-ch. open drain 4 bit I/O port (port 14) Each bit can contain blow up resistor. (mask option) Open drain voltage:12V	Input
PTH00-PTH03	I	-	Variable threshold voltage 4 bit analog inpt port.	
P10	I	-	Timer/event pulse input port.	
P11				
PTO0	I/O	P20	Timer/event pulse output port.	Input
PTO1		P21		
SCK	I/O	P01	Serial clock I/O port.	Input
S0	I/O	P02	Serial data output port.	Input
S1	I	P03	Serial data input port.	Input
INT4	I	P00	Interruption input port (detect edge vector).	Input
INT0	I	P10	Interruption input port (detect edge vector).	Input
INT1		P11		
INT2	I	P12	Detect edge testable input port.	Input
INT3		P13		
PCL	I/O	P22	Clock output port.	Input
X1, X2		-	System Clock connection port.	
RESET	I	-	System reset input port(L: active)	
NC	-	-	No connection.	
V_{DD}	-	-	Constant voltage supply port.	
V_{SS}	-	-	Ground potential supply port.	

BLOCK DIAGRAM

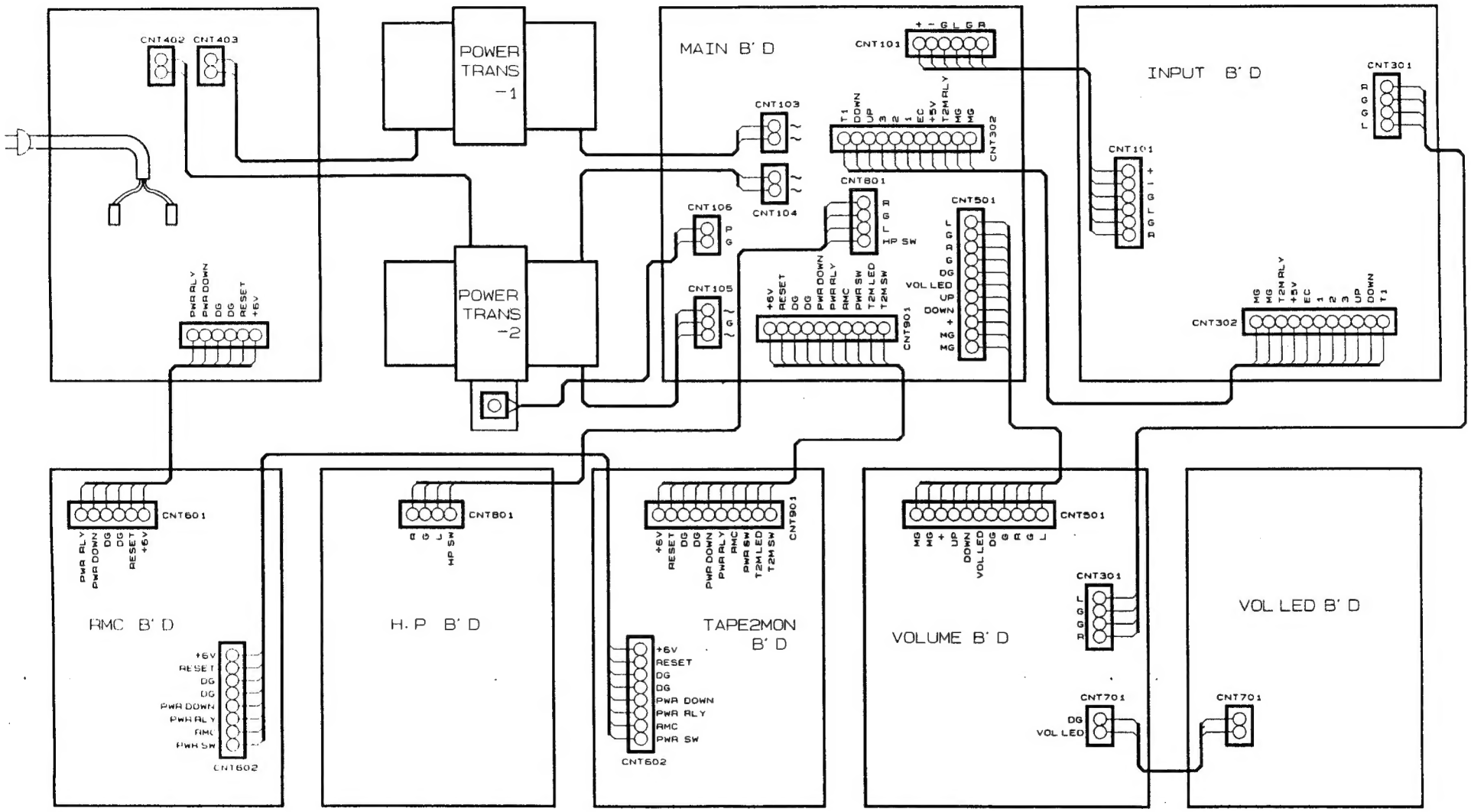
Model No.: ACS-7000A



THE SAME THE OTHER CHANNEL

WIRING DIAGRAM

Model No.: ACS-7000A



TROUBLESHOOTING

Symptom	Cause and Remedy
Amplifier inoperative	• Faulty AC power cord. Replace. • Defective power switch. Replace. • Broken wire in the power transformer. Replace the power transformer. • Defective power transformer. Replace. • Damaged rectifying diodes D114, D115. Replace the defective diode(s). • Short in the rectifying circuit. Repair the short.
No sound from both channels or one channel	• Defective in transistor Q127. Replace. • Defective in relay RLY 101. Replace.
Headphones inoperative.	• Defective in transistor Q128. Replace. • Defective in relay RLY102. Replace.
The stand-by function does not work.	• Damaged rectifying diodes D401 to D404. Replace the defective diode(s). • Defective in relay RLY401. Replace. • Defective stand-by transformer TRANS 401. Replace. • Defective in transistor Q401. Replace. • Defective stand-by circuit. Repair. • Defective IC102. Replace.
The indicators are not on.	• Defective IC102. Replace. • Defective LED701, LED901. Replace.
Volume motor does not work.	• Defective motor volume. Replace. • Defective IC 501. Replace.
Function selector inoperative.	• Defective function selector motor. Replace. • Defective IC 302. Replace. • Defective function selector switch SW301. Replace.

MECHANICAL PARTS LIST

Ref.No.	Description	Part No.	Q'ty	Version
PACKAGE				
	Film Soft PE	971500510	1	
	Cushion Poly	9722038510	1	
	Box Carton	049604125111	1	KS
	Box Carton	049604125163	1	D
	Box Carton	049604125113	1	PT INDO
ACESSORICS				
	Ass'y Commander	058581000164	1	KS
	Battery 1.5V AA (R6M)	5518001610	1	
	Manual Instruction	9007017941	1	PT INDO
	Manual Instruction	9007017942	1	D
	Manual Instruction	9007017940	1	KS
CABINET & CHASSIS				
1	P.C. Board RMC	4005113730	1	
2(SEN601)	Sensor Remote	2408000131	1	
3	Switch Tact	4658003710	2	
4	P.C. Board Headphone	4001100120	1	
5	Jack Phone, Black	4438005510	1	
6	Body Front, ABS HF-380, Black	8521008810	1	
7	Window Sensor, PC LN1250, Dark Wine	8555048910	1	
8	Knob Power, Aluminum., ABS HF-380	048643006911	1	
9	Panel Front, Aluminum., ABS HF-380	048602019211	1	KS(Only)
	Panel Front, Aluminum., ABS HF-380	048602019212	1	PT INDO.D.A
10	Knob Input Selector, Aluminum, ABS HF-380	048643005521	1	
11	Knob universal, Aluminum, C 3601, Brass	058555043820	1	
12	LED, Red	2308220142	2	
13	Knob Main Volume, ABS HF-380	048643006811	1	
14	P.C. Board Volume LED	4001100110	1	
15	Knob Main Volume, ABS HF-380	048643007011	1	
16	Indicator LED, ABS, Milky	8555049010	1	
17	Volume Main, Silver Gold	3208068310	1	
18	P.C. Board Tape Monitor	4005113740	1	
19	P.C Board Tape Monitor	4005113720	1	
20	Frame Sold "L", SECC	6121613310	1	
21	Foot, ABS HF-380, Black	6035103810	4	
22	Heatsink Main Power, AL 6063	75022008210	1	
23	Bracket Heatsink, SECC	6505137710	1	
24	Screw HEXM 3 x 12Y	8099130121	10	
25	Shaft Universal, Brass	057015004910	1	
26	P.C. Board Main	4001100100	1	
27	Frame Side "R"	6123017210	1	
28	Cover Bottom, SECC	6122420010	1	
29	Bracket PCB	6505139610	1	
30	Plate Ground	6165143510	1	
31	Terminal Speaker, Black	4408107720	1	
32	Jack RCA 2P(R, W), Black	4448305510	1	
33	Bracket PCB Signal, SECC	6505137810	1	
34	Jack RCA 2P(G,G), Black	4448305520	1	
35	Sponge Rubber, Black	6715025310	1	
36	Switch Input Selector	4618009910	1	
37	P.C.Board Input	4005113700	1	
38	Jack RCA 6P, Black	4448114710	2	
39	Jack RCA 4P, Black	4448114610	1	
40	Chassis Back, SECC, Black	046102041111	1	KS
	Chassis Back, SECC, Black	046102041121	1	A
	Chassis Back, SECC, Black	046102041131	1	B
	Chassis Back, SECC, Black	046102041141	1	C
	Chassis Back, SECC, Black	046102041151	1	D
	Chassis Back, SECC, Black	046102041161	1	E
	Chassis Back, SECC, Black	046102041171	1	F
	Chassis Back, SECC, Black	046102041191		PT INDO
41	System Ground with Nut, Gold	4463100420	1	
42	Cover Top, SECC, Silver Gold	046122029011	1	
43	AC Outlet, Black	4448105510	1	KS
	AC Outlet, Black	4448103210	1	A
	AC Outlet, Black	4448103610	1	B,C,D,F
44	Cord AC Power	4308007310	1	KS
	Cord AC Power	4308001410	1	A
	Cord AC Power	4308000430	1	B,C,D,F
	Cord AC Power	4308007610	1	E
45	Stopper Cold	6518002320	1	
46	Terminal Ground	4235007210	3	
47	P.C.Board Stand By	4005113710	1	
48	Power Transformer, 220 V 60 Hz (1)	2828001097	1	KS
	Power Transformer, 230 V 50 Hz (1)	2828001297	1	D
	Power Transformer, 110/220 V 50/60 Hz (1)	2828001277	1	PT IN DO
49	Power Transformer, 220 V 60 Hz (2)	2828001107	1	KS
	Power Transformer, 230 V 50 Hz (2)	2828001307	1	D
	Power Transformer, 110/220 V 50/60 Hz (2)	2828001287	1	PT IN DO
50	Heatsink Regulator TR., Aluminum	7505206620	4	
51	Switch Tact	4658004010	1	
52	Switch Slide 3P	4618006610	1	B,PT INDO
53	Switch Slide 6P	4618006510	1	B,PT INDO
54	Adapter Plug	4428300410	1	B,PT INDO
55	P.C Board Voltage Selector	4001100130	1	B C,D,F
S	Screw #2BTC 3 x 8B	8109230083	40	
S1	Screw #1PTC 3 x 10B	8119130103	11	
S2	Screw Ground	8155000710	2	
S3	Screw Mecha	8155001210	2	
S4	Screw #2WPTC 3 x 8B	8159230081	15	
S5	Screw WSAM 4 x 8Y	8159440081	8	
S6	Screw WSAM 4 x 8B	8159440083	4	
S7	Screw 2#TTC 3 x 8N	8198002010	2	

This parts list is applied for only "DEAWOO" model number (ACS-7000A)

Ref. No.	Description	Part No.	Q'ty
	Box Carton	049605256719	1
	Manual Instruction	9007017945	1
	Ass'y Commander	541810113175	1
1	Panel Front	048602019214	1
17	Chassis Back	0461020411521	1

PRODUCT SAFETY NOTICE

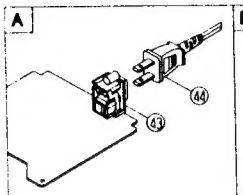
Each precaution in this manual should be follower during servicing. Components identified with the IEC symbol ! in the parts list and the safety can be of special significance. When replacing a component identified with ! , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

EXPLODED VIEW I

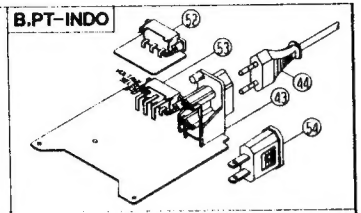
Model No.: ACS-7000A

CABINET & CHASSIS

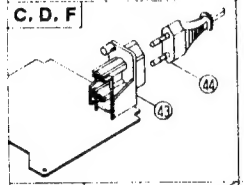
A



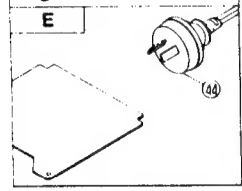
B.PT-INDO



C. D. F



E



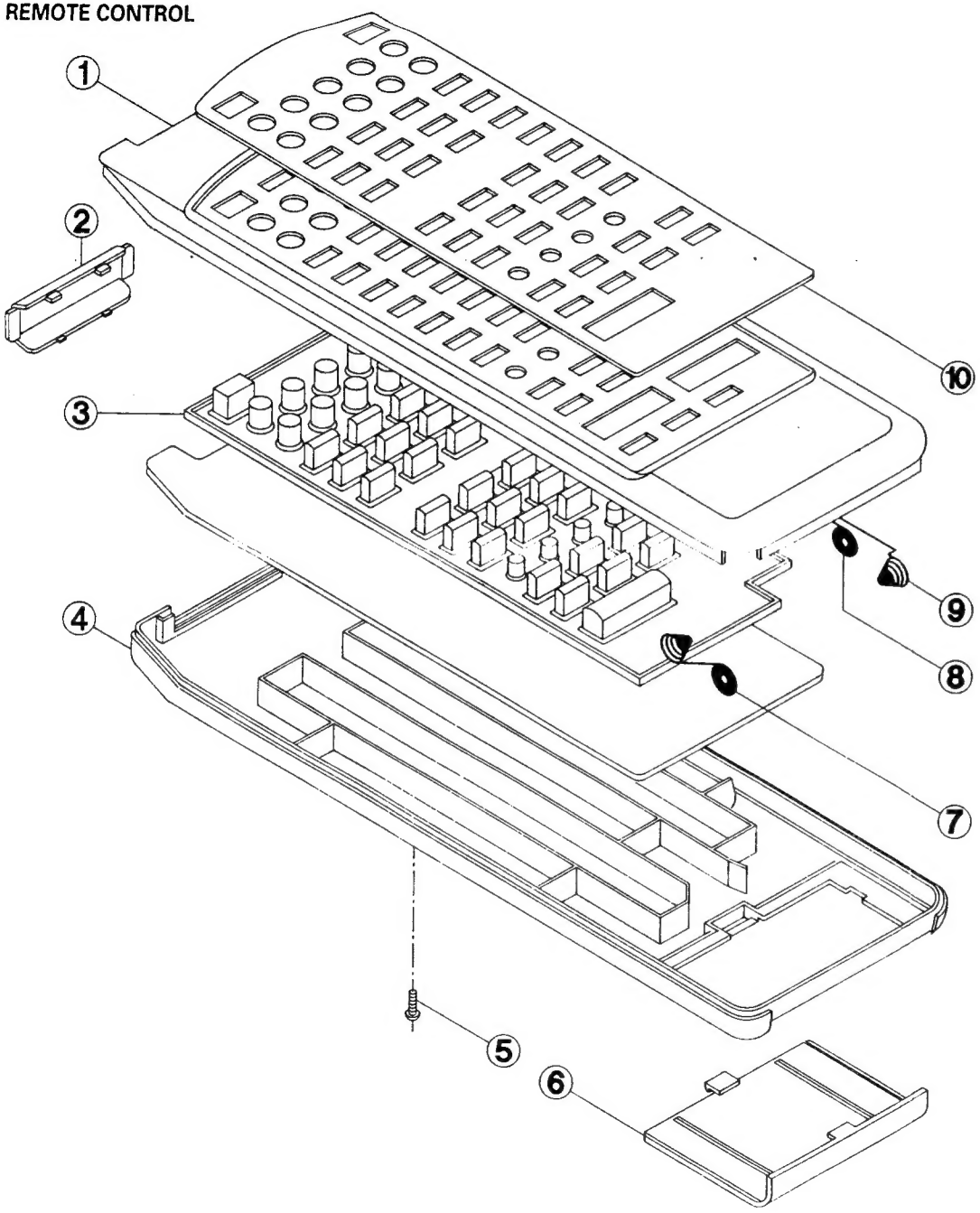
NO	DESCRIPTION	A	B	C. D. F
43	AC OUTLET	4448103210	4448103610	4448103810
44	POWER CORD	4308001410	4308000430	4308000430
52	SW SLIDE 3P	—	4618008610	—
53	SW SLIDE 8P	—	4618008510	—
54	ADAPTER PLUG	—	4428300410	—
55	VOL SELECTOR B'D	—	—	4001100130
9	PANEL FRONT (AL)	048602019212	048602019212	048602019212
40	CHASSIS BACK	046102041121	B:046102041131 C:046102041141	
		PT-INDO:046102041181	D:046102041151	
			F:046102041171	

NO	DESCRIPTION	E	DOM
43	AC OUTLET	—	4448105510
44	POWER CORD	4308007610	4308007310
52	SW SLIDE 3P	—	—
53	SW SLIDE 8P	—	—
54	ADAPTER PLUG	—	—
55	VOL SELECTOR B'D	—	—
9	PANEL FRONT (AL)	048602019212	048602019211
40	CHASSIS BACK	046102041161	046102041111

EXPLODED VIEW II

REMOTE CONTROL

Model No.: ACS-7000A

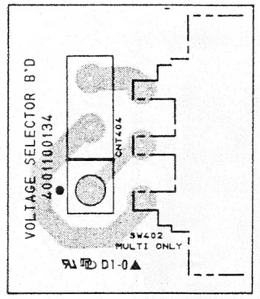


PARTS LIST.

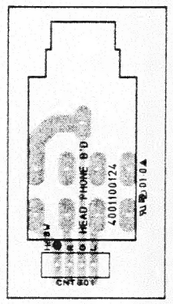
NO.	PARTS NO.	DESCRIPTION	Q'TY	REMARKS
1	048582001125	COVER TOP	1	KS
	048582001126	COVER TOP	1	D,PT INDO,A,C,D
2	8555040210	UPPER COVER	1	D,PT INDO,A,C,D
3	048722001111	BUTTON SILICON	1	D,PT INDO,A,C,D
	048722001112	BUTTION SILICON	1	D,PT INDO,A,C,D
4	048582001221	COVER BOTTOM	1	
5	8119620084	SCREW #2 PT 2X8N	1	
6	048583004421	COVER BATTERY	1	
7	6555605310	SPRING BATTERY (+. -)	1	
8	6555009710	SPRING BATTERY (+)	1	
9	6555009810	SPRING BATTERY (-)	1	
10	048552003841	INLAY COMMANDER	1	KS
	048552003842	INLAY COMMANDER	1	PT INDO,A,C,D

PRINTED CIRCUIT BOARDS

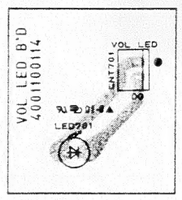
P.C. Board Voltage Selector
(4001100134)



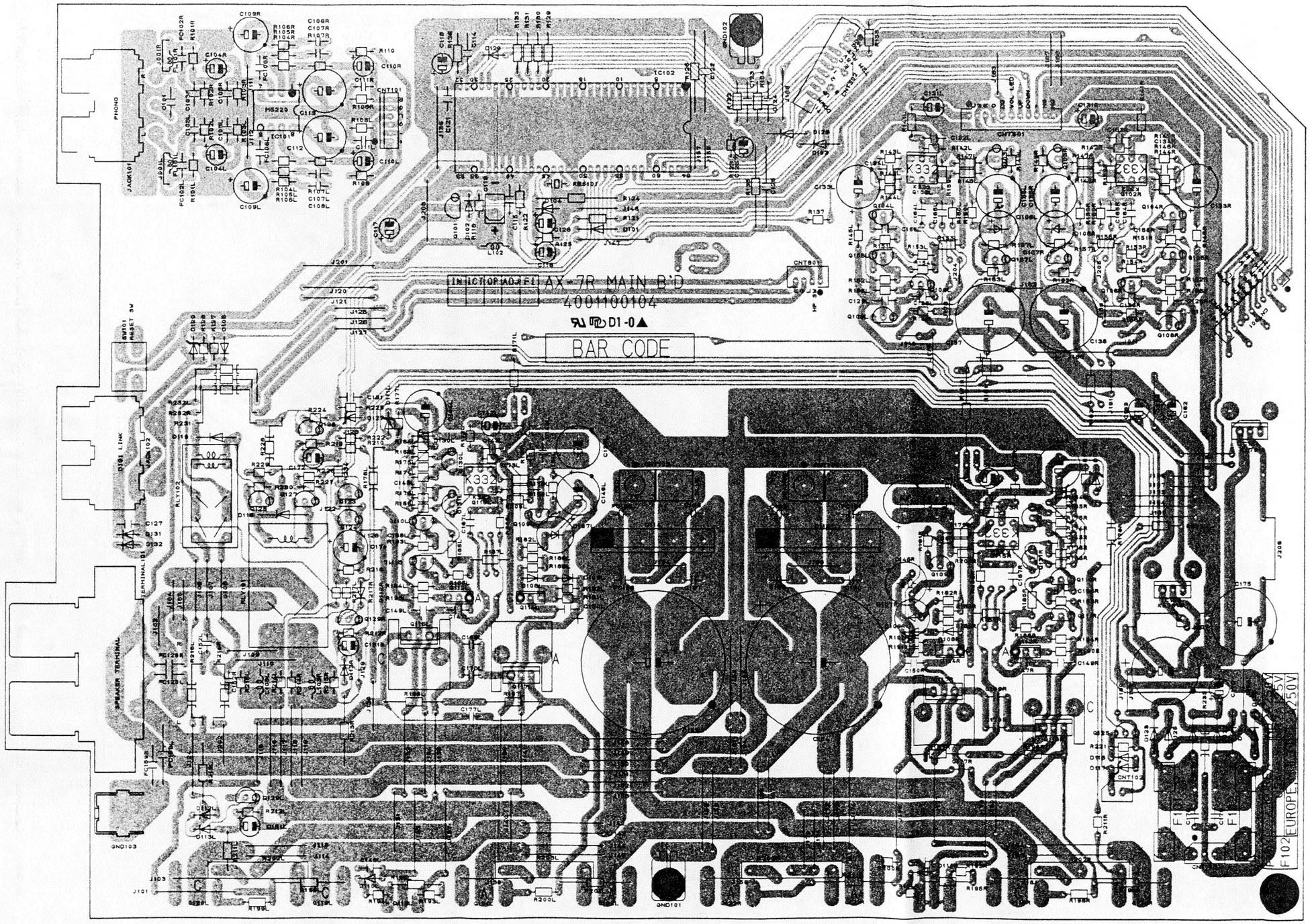
P.C. Board Headphone
(4001100124)



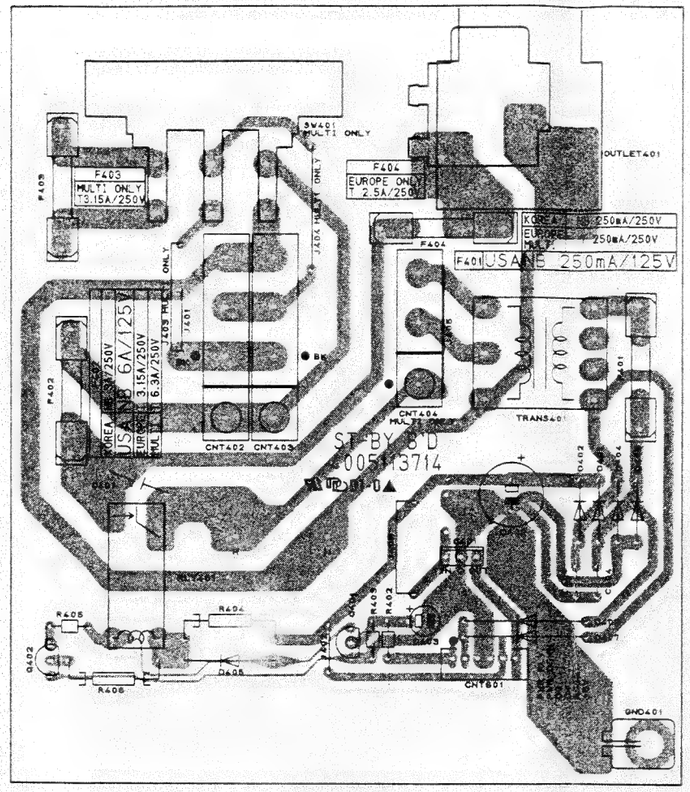
P.C. Board Vol. LED
(4001100114)



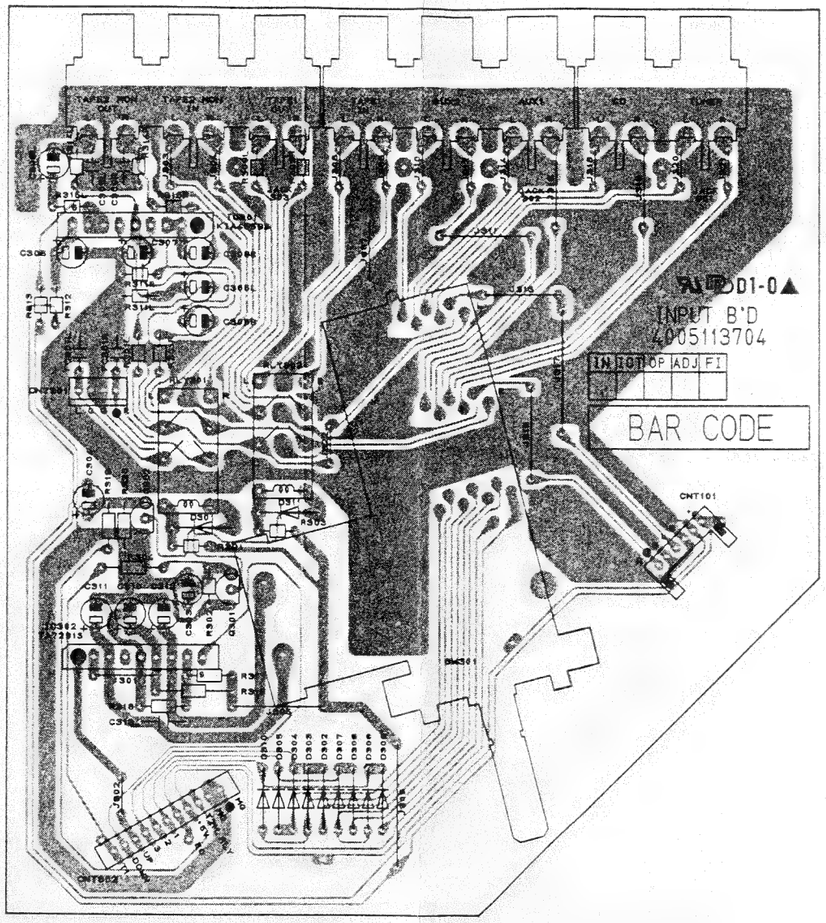
P.C. Board Main (4001100104)



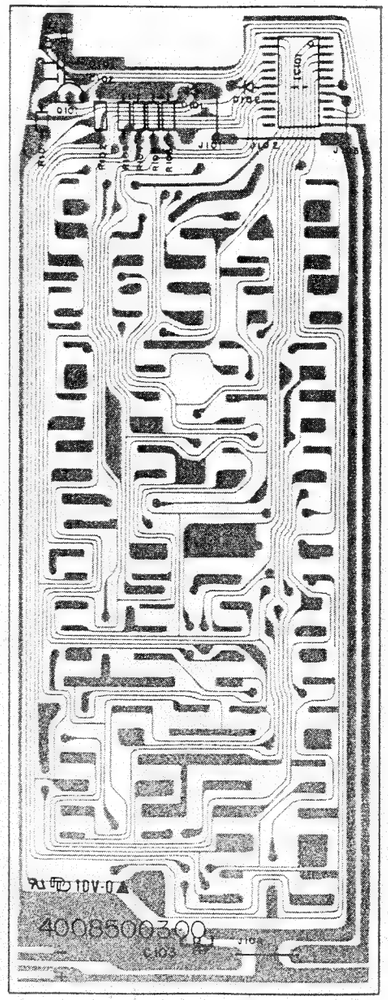
P.C. Board Stand-By (400511374)



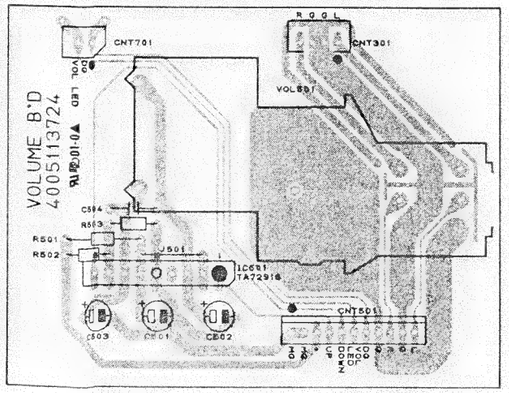
P.C. Board Input (4005113704)



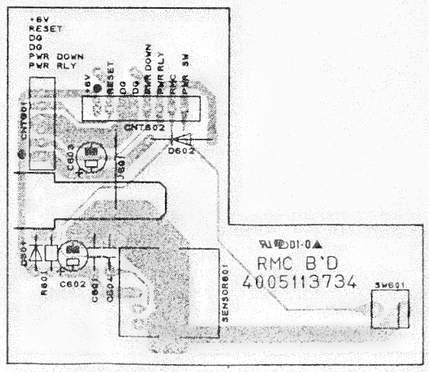
P.C. Board Commander (4008500300)



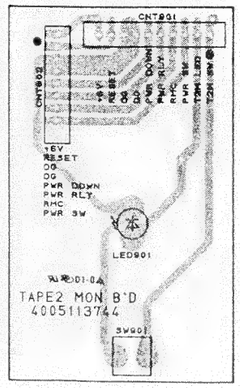
P.C. Board Volume (4005113724)



P.C. Board RMC (4005113734)



P.C. Board Tape 2 Mon. (4005113744)



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE : Products marked with ! have special characteristics important to safet If you replace of these components, read carefully the product safety notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor Tolerance, D : (±0.5%), J : (±5%), K : (±10%), M : (±20%), Z : (+80, -20%).

Ref.No.	Description				Part No.	Q'ty	Version
	A'ssy P.C. Board Main				054021010085	1	
30	Plate Ground				61665143510	1	
31	Terminal Speaker, Black(Gold)				4408107720	1	
32	Jack RCA 2P(R, W), Black(Gold)				4448305510	1	
34	Jack RCA 2P(G, G), Black(Gold)				4448305520	1	
46	Terminal Ground				4235007210	2	
50	Heatsink Regulator TR., Aluminum				7505206620	4	
51	Switch Tact				4658004010	1	
C101	Ceramic Disc	0.047	µF	50 V Z	3579473530	1	
C103L/R	Ceramic Tubular	68	pF	50 V J	3519580935	2	
C104L/R	Electrolytic AU	4.7	µF	35 V M	3479547969	2	
C105L/R	Ceramic Tubular	33	pF	50 V J	3519330935	2	
C107L/R	Mylar	0.0056	µF	100 V J	3679562120	2	
C108L/R	Mylar	0.018	µF	100 V J	3679182120	2	
C109L/R	Electrolytic AU	47	µF	16 V M	3479547039	2	
C110L/R	Electrolytic AU	2.2	µF	50 V M	3479522979	2	
C111L/R	Mylar	0.0027	µF	100 V J	3679272120	2	
C112/C113	Electrolytic AU	100	µF	25 V M	3479510149	2	
C114/C115	Ceramic Disc	0.047	µF	50 V Z	3579473530	2	
C116	Electrolytic SA	3.3	µF	50 V M	3479233971	1	
C117	Electrolytic SA	1	µF	50 V M	3479210971	1	
C118	Electrolytic SG	100	µF	10 V M	3479310121	1	
C119	Backup Capacitor	0.047	µF	5.5 V M	3449347314	1	
C121/C122	Ceramic Disc	0.047	µF	50 V Z	3579473530	2	
C123/C124	Ceramic Disc	0.01	µF	50 V Z	3579103530	2	
C125	Ceramic Disc	0.022	µF	50 V Z	3579223530	1	
C126	Electrolytic SG	100	µF	10 V M	3479310121	1	
C127	Ceramic Disc	0.047	µF	50 V Z	3579473530	1	
C128	Electrolytic SA	2.2	µF	50 V M	3479222971	1	
C129L/R	Ceramic Tubular	5.6	pF	50 V K	3519056935	2	
C131L/R	Electrolytic AU	4.7	µF	50 V M	3479547969	2	
C132L/R	Ceramic Tubular	33	pF	50 V J	3519330935	2	
C133L/R	Electrolytic AU	220	µF	16 V M	3479522139	2	
C134L/R	Ceramic Tubular	330	pF	50 V J	3519331935	2	
C135L/R	Electrolytic AU	470	µF	6.3 V M	3479547119	2	
C136L/R	Ceramic Tubular	18	pF	50 V J	3519180935	2	
C137/C138	Electrolytic AU	1000	µF	16 V M	3479510239	2	
C139L/R	Electrolytic AU	220	µF	16 V M	3479522139	2	
C140L/R	Mylar	0.22	µF	63 V J	3679224297	2	
C141L/R	Ceramic Tubular	330	pF	50 V J	3519331935	2	
C142L/R	Electrolytic AU	10	µF	35 V M	3479510089	2	
C143L/R	Ceramic Tubular	150	pF	50 V J	3519151935	2	
C144L/R	Electrolytic AU	100	µF	25 V M	3479510149	2	
C145L/R	Ceramic Tubular	330	pF	50 V J	3519331935	2	
C146L/R	Electrolytic AU	470	µF	6.3 V M	3479547119	2	
C147L/R	Ceramic Tubular	15	pF	50 V J	3519150935	2	
C148L/R	Ceramic Tubular	1000	pF	50 V J	3519102935	2	
C149L/R	Ceramic Tubular	150	pF	50 V J	3519151935	2	
C150L/R	Ceramic Tubular	150	pF	50 V J	3519151935	2	
C151L/R	Electrolytic SA	4.7	µF	50 V M	3479247971	1	
C152L/R	Mylar	0.047	µF	100 V J	3679473120	2	
⚠ C153/C154	Electrolytic AU	8200	µF	50 V M	3419082222	2	
C157/C158	Mylar	0.01	µF	400 V J	3679103267	2	
C162/C163	Mylar	0.01	µF	400 V J	3679103267	2	
C164L/R	Ceramic Tubular	5.6	pF	50 V K	3519056935	2	
C165L/R	Ceramic Tubular	2.2	pF	50 V K	3519022935	2	
C166L/R	Ceramic Tubular	15	pF	50 V J	3519150935	2	
C167L/R	Ceramic Tubular	4.7	pF	50 V K	3519047935	2	
C168L/R	Ceramic Tubular	15	pF	50 V J	3519150935	2	
C169L/R	Mylar	1	µF	63 V J	3679105297	2	
C170L/R	Mylar	1	µF	63 V J	3679105297	2	
C171	Electrolytic SG	470	µF	10 V M	3479347121	1	
C172	Electrolytic SA	4.7	µF	50 V M	3479247971	1	
C173	Electrolytic SG	100	µF	35 V M	3479310161	1	
⚠ C174/C175	Electrolytic SG	2200	µF	35 V M	3409322269	2	
C177L/R	Mylar	1	µF	63 V J	3679105297	2	
⚠ C178/C179	Mylar	0.033	µF	100 V J	3679333120	2	
C181	Ceramic Disc	0.047	µF	50 V Z	3579473530	1	
C182/C183	Electrolytic SA	2.2	µF	50 V M	3479222971	2	
CN101	Lead Ass'y, 6P, 160mm				435206168332	1	
CP102	Wafer, 2P				4428508210	1	
CP103	Wafer LV, 2P				4428525780	1	
CP104	Wafer LV, 2P				4428525780	1	
CP105	Wafer, 3P				4428505710	1	
CP302	Wafer, 11P				4428517010	1	
CP501	Wafer, 11P				4428517010	1	
CP601	Wafer, 4P				4428516310	1	
CP901	Wafer, 10P				4428516910	1	
D101-D103	1N4148M, Switching				2058322101	3	
D104	Zener, UZ 5.1BSB				2258599103	1	
D105	1N4148M, Switching				2058322101	1	
D106L/R	LED, SLR-34URCF25				2371124701	2	
D107L/R	LED, SLR-34URCF25				2371124701	2	
D108L/R	1N4148M, Switching				2058322101	2	
D109L/R	1N4148M, Switching				2058322101	2	
D110L/R	1N4148M, Switching				2058322101	2	
D111L/R	Zener, UZ 22.0BSC				2258599119	2	
D112L/R	1N4148M, Switching				2058322101	2	
D113L/R	1N4148M, Switching				2058322101	2	
⚠ D114/D115	D6SBA60, Bradge				2058512126	2	
D116	1N4148M, Switching				2058322101	1	
D117	Zener, UZ 8.2BSB				2258599123	1	
⚠ D118/D119	1N4002, Rectifeir				2258100135	2	
D120	Zener, UZ 5.6BSB				2258299104	1	
⚠ D121-D126	1N4002, Rectifeir				2258100135	6	
D127	Zener, UZ 4.3BSB				2258599102	1	
D128/D129	1N4148M, Switching				2058322101	2	
D130L/R	Zener, UZ 8.2BSB				2258599123	2	
D131/D132	1N4148M, Switching				2058322101	2	
⚠ F101	Fuse, NB 2 A, 250 V				5508202430	1	KS(Only)
⚠ (F101)	Fuse, T 2 A, 250 V				5508302435	1	D,B,PT INDO
⚠ F102	Fuse, NB 2 A, 250 V				5508202430	1	KS(Only)
⚠ (F102)	Fuse, T 2 A, 250 V				5508302435	1	D,B,PT INDO
	Clip Fuse				4255001010	4	
IC101	M5220P				2168215001	1	
IC102	µPD75108CW X14, CPU				2138313217	1	
IC103	KA7818, Regulator				2168601106	1	
IC104	KA7915, Regulator				2168600106	1	
L102	Coil Inductor, 100 µH				2648610182	1	
L103L/R	Coil Inductor, 0.5 µH				2648001010	2	
Q101	KTC1815Y/KTC3198, NPN, Silicon				2208606104	1	
Q102L/R	2SK332F				2018217700	2	
Q103L/R	BKTC2235Y/KTC1027, NPN, Silicon				2028406120	2	
Q104L/R	KTC2229Y/KTC3206, NPN, Silicon				2208606107	2	
Q105L/R	KTC2229Y/KTC3206, NPN, Silicon				2208606107	2	
Q106L/R	BKTA865Y/KTA1023, PNP, Silicon				2028106107	2	
Q107L/R	BKTC2235Y/KTC1027, NPN, Silicon				2028406120	2	
Q108L/R	BKTC2235Y/KTC1027, NPN, Silicon				2028406120	2	
Q109L/R	BKTC2235Y/KTC1027, NPN, Silicon				2028406120	2	
Q110L/R	KTC2229Y/KTC3206, NPN, Silicon				2208606107	2	
Q111L/R	KTC2229Y/KTC3206, NPN, Silicon				2208606107	2	
Q112L/R	2SA1859A, PNP, Silicon, Power TR.				2028016100	2	
Q114L/R	2SC4883AY, NPN, Silicon, Power TR.				2028316100	2	
Q115L/R	2SK332F				2018217700	2	
Q116L/R	2SC4883AY, NPN, Silicon, Power TR.				2028316100	2	
Q117L/R	2SA1859A, PNP, Silicon, Power TR.				2028016100	2	
Q118L/R	2SC4137, NPN, Silicon, Bias				2008622110	2	
Q119L/R	2SC3856, NPN, Silicon, Power TR.				2028416106	2	
Q120L/R	2SC3856, NPN, Silicon, Power TR.				2028416106	2	
Q121L/R	2SA1461, PNP, Silicon, Power TR.				2028116103	2	
Q122L/R	2SA1461, PNP, Silicon, Power TR.				2028116103	2	
Q123-Q125	KTC1815Y/KTC3198, NPN, Silicon				2208606104	3	
Q126	KTA1015Y/KTA1266, PNP, Silicon				2208206105	1	
Q127/Q128	KTC1815Y/KTC3198, NPN, Silicon				2208606104	2	
Q129L/R	KTC1815Y/KTC3198, NPN, Silicon				2208606104	2	
Q130L/R	KTC2229Y/KTC3206, NPN, Silicon				2208606107	2	
Q131L/R	KTC2229Y/KTC3206, NPN, Silicon				2208606107	2	
R101L/R	Carbon Film	620	ohm	1/5 W J	3069621970	2	
R102L/R	Carbon Film	270	kohm	1/5 W J	3069274970	2	
R103L/R	Carbon Film	56	kohm	1/5 W J	3069563970	2	
R104L/R	Carbon Film	560	kohm	1/5 W J	3069564970	2	
R105L/R	Carbon Film	4	kohm	1/5 W J	3069433970	2	
R106L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R107L/R	Carbon Film	620	ohm	1/5 W J	3069621970	2	

Ref.No.	Description				Part No.	Q'ty	Version
R108L/R	Carbon Film	100	kohm	1/5 W J	3069104970	2	
R109/R110	Carbon Film	100	ohm	1/5 W J	3069101970	2	
R118	Carbon Film	100	kohm	1/5 W J	3069104970	1	
R121	Carbon Film	1.2	kohm	1/5 W J	3069122970	1	
R122	Carbon Film	10	kohm	1/5 W J	3069103970	1	
R123	Carbon Film	47	kohm	1/5 W J	3069473970	1	
R124/R125	Carbon Film	4.7	kohm	1/5 W J	3069472970	2	
R126	Carbon Film	47	kohm	1/5 W J	3069473970	1	
R127	Carbon Film	22	kohm	1/5 W J	3069223970	1	
R128	Carbon Film	220	kohm	1/5 W J	3069224970	1	
R129-R135	Carbon Film	47	kohm	1/5 W J	3069473970	7	
R136	Carbon Film	10	kohm	1/5 W J	3069103970	1	
R137/R138	Carbon Film	330	ohm	1/5 W J	3069331970	2	
R141L/R	Carbon Film	1.5	kohm	1/5 W J	3069152970	2	
R142L/R	Carbon Film	270	kohm	1/5 W J	3069274970	2	
R143L/R	Carbon Film	1.8	kohm	1/5 W J	3069182970	2	
R144L/R	Carbon Film	1.8	kohm	1/5 W J	3069182970	2	
R145L/R	Carbon Film	1	kohm	1/5 W J	3069102970	2	
R146L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R147L/R	Carbon Film	47	ohm	1/5 W J	3069470970	2	
R148L/R	Carbon Film	47	ohm	1/5 W J	3069470970	2	
R149L/R	Carbon Film	390	ohm	1/5 W J	3069391970	2	
R150L/R	Carbon Film	4.7	kohm	1/5 W J	3069472970	2	
R151L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R152L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R153L/R	Carbon Film	22	ohm	1/5 W J	3069220970	2	
R154L/R	Carbon Film	22	ohm	1/5 W J	3069220970	2	
R156L/R	Carbon Film	2.7	kohm	1/5 W J	3069272970	2	
R156L/R	Carbon Film	39	ohm	1/5 W J	3069390970	2	
R157L/R	Carbon Film	82	ohm	1/5 W J	3069820970	2	
R158L/R	Carbon Film	1	kohm	1/5 W J	3069102970	2	
R159L/R	Carbon Film	620	ohm	1/5 W J	3069621970	2	
R160L/R	Carbon Film	3.3	kohm	1/5 W J	3069332970	2	
R161/R162	Carbon Film	39	ohm	1/5 W J	3069390970	2	
R163L/R	Carbon Film	68	ohm	1/5 W J	3069680970	2	
R164L/R	Carbon Film	33	kohm	1/5 W J	3069333970	2	
R165L/R	Carbon Film	82	ohm	1/5 W J	3069820970	2	
R166L/R	Carbon Film	82	ohm	1/5 W J	3069820970	2	
R167L/R	Carbon Film	2.2	kohm	1/5 W J	3069222970	2	
R171L/R	Carbon Film	620	ohm	1/5 W J	3069621970	2	
R172L/R	Carbon Film	1.2	kohm	1/5 W J	3069122970	2	
R173L/R	Carbon Film	56	kohm	1/5 W J	3069563970	2	
R174L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R175L/R	Carbon Film	1.8	kohm	1/5 W J	3069182970	2	
R176L/R	Carbon Film	1.8	kohm	1/5 W J	3069182970	2	
R177L/R	Carbon Film	100	ohm	1/5 W J	3069101970	2	
R178L/R	Carbon Film	1	kohm	1/5 W J	2039152470	2	
R179L/R	Metal Film	47	ohm	1/5 W J	3069470970	2	
R180L/R	Carbon Film	47	ohm	1/5 W J	3069470970	2	
R181L/R	Carbon Film	390	ohm	1/5 W J	3069391970	2	
R182L/R	Carbon Film	15	kohm	1/5 W J	3069153970	2	
R183L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R184L/R	Carbon Film	820	ohm	1/5 W J	3069821970	2	
R185L/R	Carbon Film	22	ohm	1/5 W J	3069220970	2	
R186L/R	Carbon Film	22	ohm	1/5 W J	3069220970	2	
R187L/R	Carbon Film	5.1	kohm	1/5 W J	3069512970	2	
R188L/R	Carbon Film	3.9	kohm	1/5 W J	3069392970	2	
R189L/R	Carbon Film	3.9	kohm	1/5 W J	3069392970	2	
R190L/R	Carbon Film	39	ohm	1/5 W J	3069390970	2	
R191L/R	Carbon Film	68	ohm	1/5 W J	3069680970	2	
R192L/R	Carbon Film	68	ohm	1/5 W J	3069680970	2	
R193L/R	Carbon Film	390	ohm	1/5 W J	3069391970	2	
R194L/R	Carbon Film	1.8	kohm	1/5 W J	3069182970	2	
R195L/R	Carbon Film	620	ohm	1/4 W J	3069621270	2	
R196L/R	Carbon Film	22	ohm	1/5 W J	3069220970	2	
R197L/R	Carbon Film	22	ohm	1/5 W J	3069220970	2	
R198L/R	Carbon Film	2.2	ohm	1/5 W J	3069229970	2	
R199L/R	Carbon Film	2.2	ohm	1/5 W J	3069229970	2	
RES101	Resonator, CST4.19MGW				3938101880	1	
RLY101	Relay, JC-2AD-DC24V				5518001450	1	
RLY102	Relay, OSA-SS-224DM3				5528001610	1	
GND101	Ground Plate				4235007310	1	
GND102	Ground Plate				4235007310	1	
R200L/R	Carbon Film	2.2	ohm	1/5 W J	3069229970	2	
R201L/R	Carbon Film	2.2	ohm	1/5 W J	3069229970	2	
⚠ R202L/R	Cement, Dual	0.39	ohm	5 W J	3059039776	2	
⚠ R203L/R	Cement, Dual	0.39	ohm	5 W J			
R205L/R	Carbon Film	1	kohm	1/5 W J			
R206L/R	Carbon Film	20	kohm	1/5 W J			
R210	Carbon Film	33	kohm	1/5 W J			
R211L/R	Carbon Film	2.2	kohm	1/5 W J			
R212L/R	Carbon Film	2.2	kohm	1/5 W J			
R213L/R	Carbon Film	15	kohm	1/5 W J			
R214L/R	Carbon Film	10	ohm	1/5 W J			
R215L/R	Carbon Film	10	ohm	1/5 W J			
R216L/R	Metal Film	10	ohm	1 W J			
R217L/R	Carbon Film	12	kohm	1/5 W J			
R218	Carbon Film	1.5	kohm	1/5 W J			
R219	Carbon Film	22	kohm	1/5 W J			
R220	Carbon Film	8.2	kohm	1/5 W J			
R221	Carbon Film	47	kohm	1/5 W J			
R222	Carbon Film	22	kohm	1/5 W J			
R224	Carbon Film	6.8	kohm	1/5 W J			
R225-R227	Carbon Film	4.7	kohm	1/5 W J			
R228	Metal Film	10	ohm	1 W J			
R229/R230	Carbon Film	4.7	kohm	1/5 W J			
R231	Metal Film	10	ohm	1 W J			
R232L/R	Metal Film	560	ohm	1 W J			
R233	Metal Film	2.2	kohm	1 W J			
R234	Carbon Film	22	kohm	1/5 W J			
RES101	Resonator, CSB455E						
	Ass'y Posistor, 280mm						
	A'ssy P.C. Board Volume LED						
LED701	LED, SLR-34URCF03						
CN701	Wire, 2P, 180mm						
	A'ssy P.C. Board Headphone						
8	Jack Phone, Black(Gold)						
CN801	Lead Ass'y, 4P, 450mm						
	A'ssy P.C. Board Voltage Selector						
CP404	Wafer LV, 3P						
	A'ssy P.C. Board Input						
36	Switch Input Selector						
38	Jack RCA 6P, Black(Gold)						
39	Jack RCA 4P, Black(Gold)						
C303/C304	Electrolytic SA	10	µF	50 V			
C305L/R	Electrolytic SA	2.2	µF	50 V			
C306/C307	Electrolytic SG	47	µF	25 V			
C308L/R	Electrolytic SA	2.2	µF	50 V			
C309L/R	Ceramic Tubular	1000	µF	50 V			
C310-C312	Electrolytic SG	47	µF	25 V			
C313	Ceramic Disc	0.047	µF	50 V			
CN301	Lead Ass'y, 4P, 300mm						
CN302	Lead Ass'y, 11P, 120mm						
CP101	Wafer, Angle, 6P						
D301	1N4002, Rectifeir						
D302-D310	1N4148M, Switching						
D311	1N4002, Rectifeir						
IC301	KIA4558S/KIA7556S, OP Amp						
IC302	TA7291S, Motor Driver						
Q301/Q302	KTC1815Y/KTC3198, NPN, Silicon						
R301L/R	Carbon Film	1.5	kohm	1/5 W			
R302	Carbon Film	4.7	kohm	1/5 W			
R303	Carbon Film	560	ohm	1/5 W			
R304	Carbon Film	4.7	kohm	1/5 W			
R309L/R	Carbon Film	1.2	kohm	1/5 W			
R311L/R	Carbon Film	270	kohm	1/5 W			
R312/R313	Carbon Film	47	ohm	1/5 W			
R314L/R	Carbon Film	100	kohm	1/5 W			
R315L/R	Carbon Film	1.2	kohm	1/5 W			
R316	Carbon Film	33	ohm	1/5 W			
R317	Carbon Film	18	kohm	1/5 W			
R318	Carbon Film	3.3	kohm	1/5 W			
R319/R320	Carbon Film	4.7	kohm	1/5 W			
R321	Carbon Film	560	ohm	1/5 W			
RLY301	Relay, G5V-2-HI						
RLY302	Relay, G5V-2-HI						

Description					Part No.	Q'ty	Version
A'ssy P.C. Board Stand-By					054021010090	1	
Capacitor, DE7150F 472MVA1					3549472409	1	
Electrolytic SG	330	µF	250 V	M	3409333149	1	
Electrolytic SA	1	µF	50 V	M	3479210971	1	
Mylar	0.033	µF	100 V	J	3679333120	2	
Wafer LV, 2P					4428525780	1	KS,D
Wafer LV, 4P					4428525800	1	B,PT INDO
Wafer LV, 2P					4428525780	1	KS,D
Wafer LV, 4P					4428525800	1	
Wafer LV, 3P					4428525790	1	
Wire LV, 3P, 140mm					4358880314	1	
Wafer, 6P					4428516510	1	
Pin Solder					4228001410		
Ground Plat					4235007310	1	
1N4002, Rectifeir					2258100135	1	
1N4148M, Switching					2058322101	5	
Fuse, NB 250 mA, 250V					5508201230	2	
Fuse, T 250 mA, 250 V					5508301234	1	KS
Fuse, NB 3 A, 250V					5508301234	1	D,B,PT INDO
Fuse, T 3.15 A, 250 V					5508202630	1	KS
Fuse, T 6.3 A, 250 V					5508302735	1	D
Fuse, T 3.15 A, 250 V					5508303235	1	B, PT INDO
Fuse, T 2.5 A, 250 V					5508302735	1	B,PT INDOnly
Clip Fuse					5508302535	1	D(Only)
Clip Fuse					4255001010	1	KS
MPSA06Y, NPN, Silicon					4255001010	1	D,B, PT INDO
KTC1815Y/KTC3198, NPN, Silicon					2208606114	1	
Carbon Film	4.7	kohm	1/5 W	J	2208606104	1	
Carbon Film	47	kohm	1/5 W	J	3069472970	1	
Metal Film	33	ohm	1 W	J	3069473970	1	
Carbon Film	18	kohm	1/5 W	J	3029330470	1	
Metal Film	390	ohm	1 W	J	3069183970	1	
Relay, OST-S-112DM(TV5)					3029391472	1	
KA7806, Regulator					5528001620	1	
					2168602106	1	
A'ssy P.C. Board Volume					(054021010091	1	
Volume Main, Silver Gold					3208068310	1	
Electrolytic SG	47	µF	25 V	M	3479347041	3	
Ceramic Disc	0.047	µF	50 V	Z	3579473530	1	
Lead Ass'y, 11P, 120mm					435211128832	1	
Wafer, 2P					4428508210	1	
Wafer, 4P					4428516310	1	
TA7291S, Motor Driver					2168007204	1	
Carbon Film	33	ohm	1/5 W	J	3069330970	1	
Carbon Film	15	kohm	1/5 W	J	3069153970	1	
Carbon Film	4.7	kohm	1/5 W	J	3069472970	1	
A'ssy P.C. Board RMC					054021010092	1	
Remot Sensor					2408000131	1	
Switch Tact					4658003710	1	
Ceramic Disc	0.047	µF	50 V	Z	3579473530	1	
Electrolytic SE	100	µF	6.3 V	M	3479110115	2	
Ceramic Tubular	100	µF	50 V	J	3519101935	1	
Lead Ass'y, 6P, 350mm					436206353332	1	
Lead Ass'y, 8P, 300mm					436408303332	1	
1N4148M, Switching					2058322101	2	
1N4148M, Switching					2058322101	1	
Carbon Film	100	ohm	1/5 W	J	3069101970	1	
Remote Sensor, KRM-34U					2408000131	1	
A'ssy P.C. Board Tape 2 MON.					054021010093	1	
Switch Tact					4658003710	1	
Lead Ass'y 10P, 120mm					436210123332	1	
LED, SLR-34URCF03					2371124702	1	

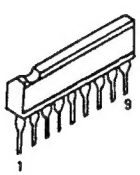
Ref.No.	Description					Part No.	Q'ty	Version
	A'ssy P.C. Board Commander					054021010094	1	
IC101	µPD6122G-002					2138013122	1	
D101	Diode, EL-2					2408001100	1	
D102	IN4148, Switching					2058322101	1	
C101	Ceramic Tubular	100	pF	50 V	J	3519101935	1	
C102	Ceramic Tubular	100	pF	50 V	J	3519101935	1	
C103	Electrolytic SS	47	µF	10 V	M	3409247022	1	
TR101	KTD1302, NPN, Silicon					2208606112	1	
R101	Carbon Film	15	ohm	1/5 W	J	3069150970	1	
R102	Carbon Film	220	kohm	1/5 W	J	3069224970	1	
R103	Carbon Film	220	kohm	1/5 W	J	3069224970	1	
R104	Carbon Film	220	kohm	1/5 W	J	3069224970	1	
R105	Carbon Film	220	kohm	1/5 W	J	3069224970	1	
R106	Carbon Film	220	kohm	1/5 W	J	3069224970	1	
RES101	Resonator, CSB455E					3938001001	1	

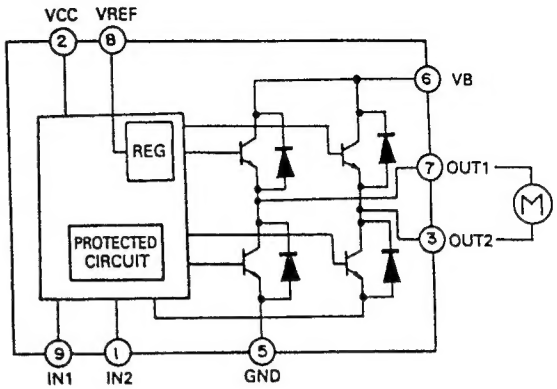
)DUCT SAFETY NOTICE

h precaution in this manual should be follower during servicing. Components identified with the IEC symbol ⚠ in the ts list and the safety can be of special significance. When replacing a component identified with ⚠ , use only the lacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the ts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are eptably insulated from the supply circuit before returing the product to the customer.

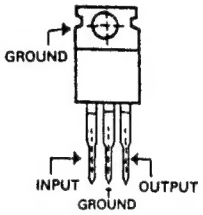
IC'S LEAD IDENTIFICATIONS & INTERNAL DIAGRAM

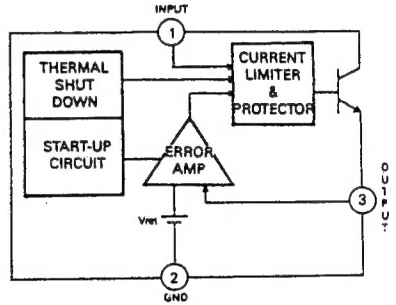
TA7291S : IC501, IC302



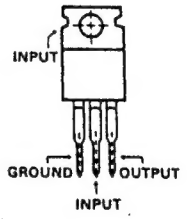


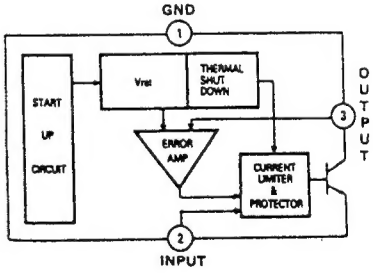
GD78XX : IC103, IC401



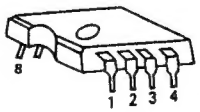


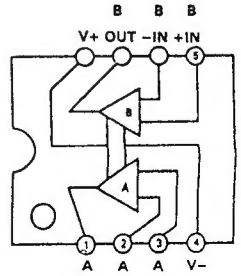
GA79XX : IC104





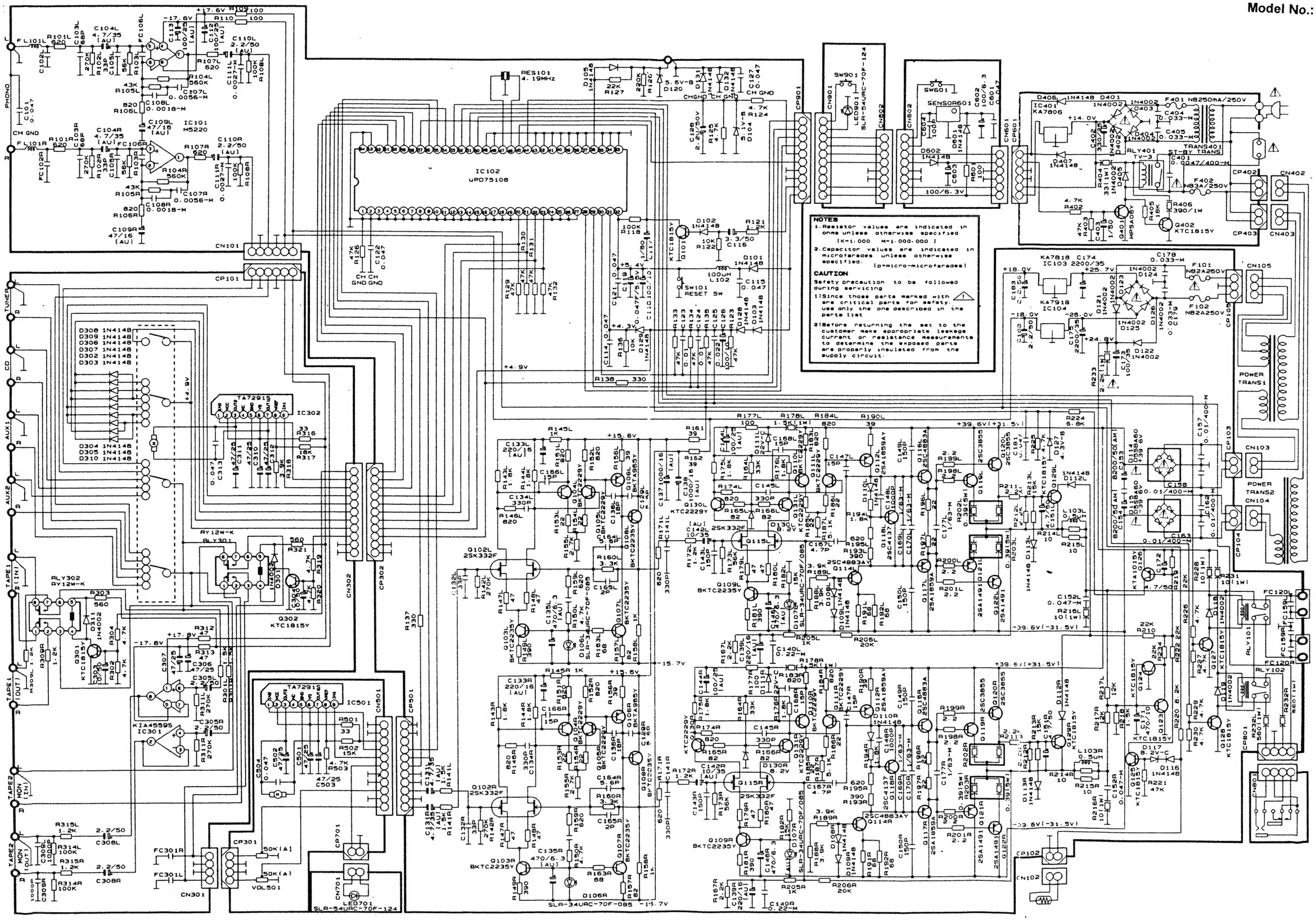
M522OP : IC101



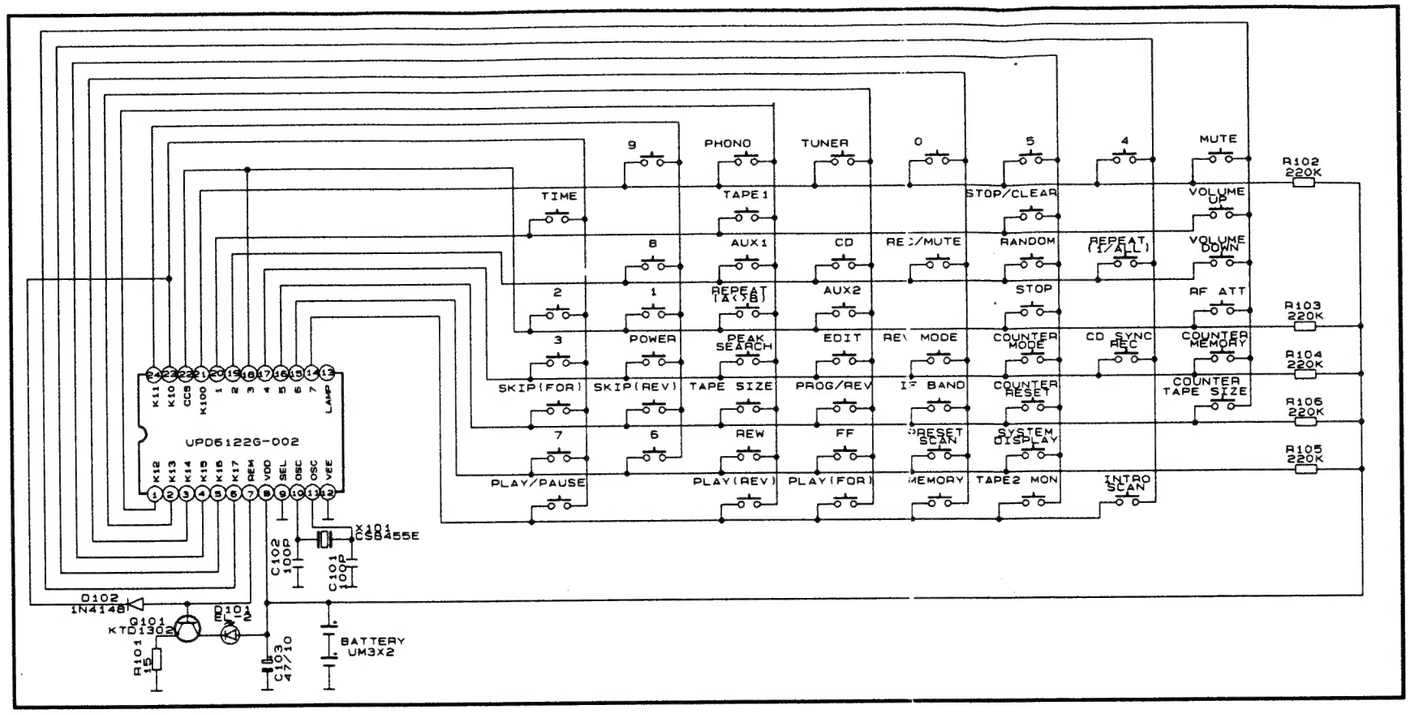


SCHEMATIC DIAGRAM I

Model No.: ACS-7000/



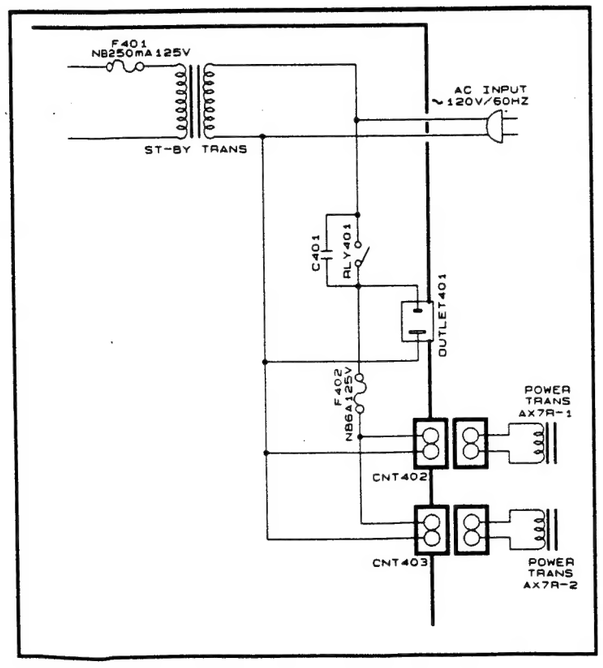
SCHEMATIC DIAGRAM II



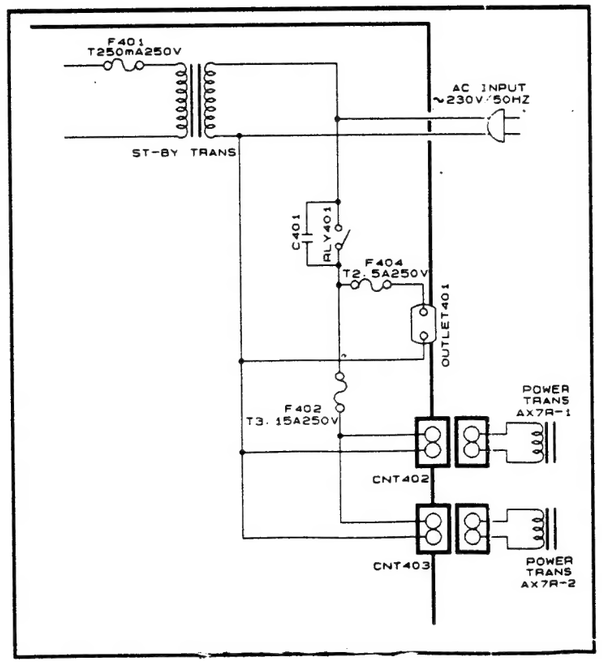
MULTI

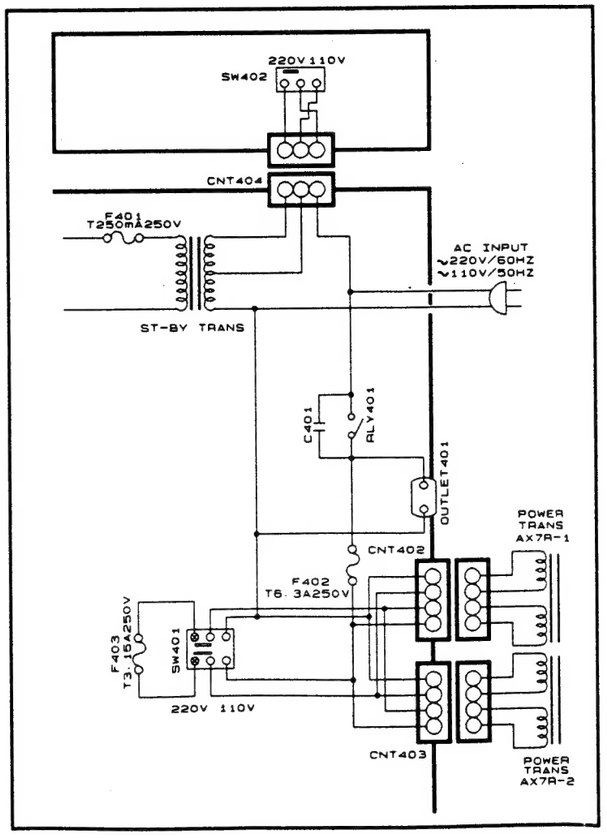
CONNECTION OF PRIMARY

USA



EUROPE





NOTES

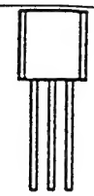
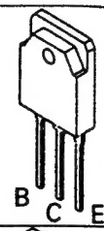
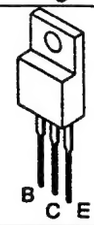
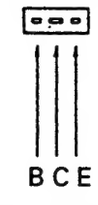
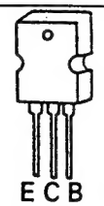
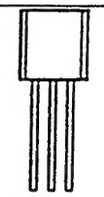
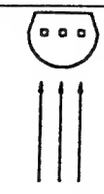
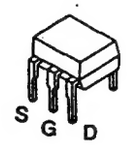
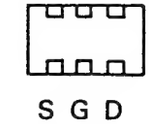
1. Resistor values are indicated in ohms unless otherwise specified (K=1,000 M=1,000,000)
2. Capacitor values are indicated in microfarades unless otherwise specified. (p=micro-microfarades)

CAUTION

Safety precaution to be followed during servicing

1) Since those parts marked with △ are critical parts for safety; use only the one described in the parts list
2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

TRANSISTORS LEAD IDENTIFICATION

Transistor	Front View	Bottom view
KTC 1815Y KTA 1015Y KTC 2229Y KTC 2235Y KTA 965Y		
2SC 3855 2SA 1491		
2SA 1859A-Y 2SC4883A-Y		
2SC4137		
KMPS A 06		
2SK332F		

TERMINAL NAME

B → BASE	S → SOURCE
C → COLLECTOR	C → GATE
E → EMITTER	D → DRAIN